

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of

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Location-Based Routing  
For Wireless 911 Calls

PS Docket No. 18-64

**INITIAL COMMENTS OF THE TEXAS 9-1-1 ENTITIES**

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**INITIAL COMMENTS OF THE TEXAS 9-1-1 ENTITIES**

The Texas 9-1-1 Alliance,<sup>1</sup> the Texas Commission on State Emergency Communications,<sup>2</sup> and the Municipal Emergency Communication Districts Association<sup>3</sup> (collectively, the “Texas 9-1-1 Entities”) respectfully submit the following initial comments on the Federal Communications Commission (the “Commission”) Notice of Inquiry (“NOI”) in the above-referenced proceeding.<sup>4</sup> In the NOI, the Commission: (i) seeks to determine the best ways to avoid delays in the response to some wireless 9-1-1 calls that result from the manner in which such calls are routed in the current 9-1-1 system (referred to as “misroutes” in the NOI); (ii) seeks comment on aspects of the CSRIC V adopted Task 2 Report (hereinafter “CSRIC V LBR Report”); and (iii) seeks comment on the development of a more complete record regarding technical and operational

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<sup>1</sup> The Texas 9-1-1 Alliance is an interlocal cooperation entity composed of 26 Texas emergency communication districts with E9-1-1 service and related public safety responsibility for more than 63% of the population of Texas. These emergency communication districts were created pursuant to Texas Health and Safety Code Chapter 772 and are defined under Texas Health and Safety Code Section 771.001(3)(B).

<sup>2</sup> The Texas Commission on State Emergency Communications (“CSEC”) is a state agency created pursuant to Texas Health and Safety Code Chapter 771, and by statute is the state program authority on emergency communications. CSEC’s membership includes representatives of the Texas 9-1-1 Entities and the general public, and directly oversees and administers the Texas state 9-1-1 program under which 9-1-1 service is provided in 206 of Texas’ 254 counties, covering approximately two-thirds of the state’s geography and one-fourth of the state’s population.

<sup>3</sup> The Municipal Emergency Communication Districts Association (“MECDA”) is an association of 26 municipal emergency communication districts, as defined under Texas Health and Safety Code Section 771.001(3)(A), that are located primarily in the Dallas-Fort Worth area.

<sup>4</sup> See *Location-Based Routing for Wireless 911 Calls*, PS Docket No. 18-64, Notice of Inquiry (rel. Mar. 23, 2018) (available at [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-18-32A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-18-32A1.pdf)).

implications, limitations, deployments, and best common practices of location-based routing (“LBR”) and the costs and benefits of different LBR methods.<sup>5</sup> The Commission also seeks comment regarding mobile Voice over Internet Protocol (“mobile VoIP”),<sup>6</sup> which is referred to herein for purposes of these initial comments as either “mobile VoIP” or “Wi-Fi Calling.”<sup>7</sup>

## **I. Summary of Initial Comments**

The focus of 9-1-1 stakeholders in this proceeding should be on providing relevant data into the public record, in order to document the best means available to facilitate reasonable improvements to wireless 9-1-1 call routing. As to the current frequency of 9-1-1 misroutes, recent data for a reasonably large sample of approximately 13,000 cell sectors in Texas shows that the percentage and number of misroutes varies considerably between sectors and between Public Safety Answering Point (“PSAP”) serving areas. For example, that data appears to show approximately 70% of the cell sectors indicated no misroutes, while approximately 10% of the sectors have greater than 50% misroutes, with certain enclave areas or cities surrounded by another city often being materially impacted by misroutes. Because the data varies considerably between sectors and between PSAP serving areas, utilizing only a general aggregate average for many

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<sup>5</sup> NOI at ¶¶ 1-5 (and footnotes 1-3) ¶ 16, and ¶¶ 17-42. The term “mistroutes” for the remainder of these initial comments is intended to be used in the manner used in the NOI. However, the following should be noted at the outset. First, not all mistroutes are transferred from one PSAP to a second PSAP (e.g., the ninth wireless 9-1-1 call within two minutes about the same accident on a highway may not be transferred to the second PSAP). Second, not all transferred 9-1-1 calls are because of mistroutes (e.g. primary PSAP boundaries may not exactly match Emergency Medical Services (EMS) dispatching boundaries and transfers to a secondary PSAP for EMS dispatching may occur even for wireline 9-1-1 calls that are routed based on the caller’s location). Put more simply and directly, the terms “mistroutes” and “transfers” are not synonymous.

<sup>6</sup> NOI at ¶¶ 22-23, and 36.

<sup>7</sup> The term “mobile VoIP” in the context of 9-1-1 calls from a smartphone or tablet appears to be the same as the term “Wi-Fi Calling.” See, NENA Master Glossary of 9-1-1 Terminology, at p. 209, definition of “Wi-Fi Calling” as “[a] service offering being used by some wireless carriers, cable companies, other companies, and some enterprise customers that seek to deliver voice calls over Wi-Fi. In the context of 9-1-1 calling at least from major wireless carriers, there is a general first preference for the mobile handset to send 9-1-1 calls over the CMRS or VoLTE networks where available and Wi-Fi calling may only be used when such does not occur within a period of several seconds. Where the 9-1-1 calling is done via Wi-Fi calling, the connectivity from the Wi-Fi access point to the 9-1-1 system is comparable to connectivity from a wired broadband connection for VoIP to the 9-1-1 system” (available at [https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/NENA-ADM-000.22-2018\\_FINAL\\_2.pdf](https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/NENA-ADM-000.22-2018_FINAL_2.pdf)).

sectors can completely obscure a considerable number of misroutes, and obscure the potential benefits of improvements in individual sectors.

In the absence of sufficient public disclosure of information and informed discussions between various 9-1-1 stakeholders (e.g., wireless service providers, handset manufacturers, third-party vendors, 9-1-1 authorities, etc.), the nature of the competitive market and the sheer number of stakeholders can present some challenges to making informed decisions and strategic transition planning regarding device-based handset initiated location technology solutions. Given the current frequency of misroutes, in the absence of documentation of material costs to wireless service providers being submitted into the record in this proceeding, at the present time it appears that Commission action would withstand “the test of feasibility and functionality relative to costs.” The manner in which device-based handset initiated location technology solutions and NG9-1-1 transition may sync up together, including interoperability and timing considerations, and how much cost responsibility is placed on wireless service providers as compared to the NG9-1-1 systems, are appropriate issues to clarify in this proceeding.

Delaying the delivery of 9-1-1 calls more than fractionally beyond 6 seconds to achieve LBR should generally be avoided. This is especially the case when other alternatives appear to be available to achieve improvements towards LBR.

Finally, with regard to mobile VoIP, continuing to provide only a registered and provisioned civic address from a smartphone or tablet for mobile VoIP 9-1-1 calls is quite concerning. Accordingly, the Texas 9-1-1 Entities urge the Commission, at a minimum and as recommended in the NENA Non-Mobile Technical Information Document, to consider the issue of a location sanity check when a customer with mobile VoIP changes locations and has not re-registered a caller civic location.

## **II. Texas-based data on misroutes associated with cell sector-based routing arrangements shows that the percentages and numbers vary considerably by sector.**

In the NOI, the Commission seeks comment on the frequency of misroutes to PSAPs and the associated time delay, asks whether such associated transfers may typically take at least one minute, and whether there are particular geographic areas or situations where the issue is more likely to occur.<sup>8</sup> The Commission cites aggregate average data from other states indicating the number and percentage of “transferred wireless 9-1-1 calls,” including approximately 13% in California.<sup>9</sup>

### **A. Data on General Aggregate Average and Sector-by-Sector**

At the outset, the Commission should recognize the following inherent issues with regard to analyzing estimated general aggregate average data on misroutes. First, the manner in which the data is gathered, and any assumptions associated with how the data was collected, may impact what the data appears to represent. Second, individual sector-by-sector percentages and numbers can vary considerably from the general aggregate average data. Third, specific area-by-area percentages and numbers can be considerably different from the general aggregate average data based on local geography, and the particular intersection between individual cell sector coverage areas and PSAP polygon coverage areas. With those caveats, the following data below is offered for Commission consideration on misroutes.

In 2017, as part of the ongoing efforts of the Greater Harris County 9-1-1 Emergency Network (“GHC 9-1-1”) to optimize cell sector routing for approximately 13,000 cell sectors in

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<sup>8</sup> *Id.*, at ¶ 17.

<sup>9</sup> *Id.*, at ¶ 2 (footnote 3). In addition, other publicly available data from the State of Virginia appears to indicate that an estimated aggregate average of 10% of wireless 9-1-1 calls are transferred. *See, Best Practices for Wireless 9-1-1 Call Routing Optimization*, Virginia Information Technologies Agency (Sept. 2017, at p. 10 (“... it has been estimated that around ten percent of all 9-1-1 calls are transferred from the originating PSAP”) (available at <https://www.vita.virginia.gov/media/vitavirginiagov/integrated-services/pdf/BPRouting2.pdf>).

its 9-1-1 service area, GHC 9-1-1 sought to compare Emergency Service Numbers (ESNs) that were used to route wireless 9-1-1 calls with the ESNs associated with wireless Phase II location information. GHC 9-1-1 administers 9-1-1 service for 49 cities, two counties (Harris and Fort Bend), and its 9-1-1 service area covers approximately 5.5 million people, which is approximately 20% of the population of the State of Texas.<sup>10</sup>

GHC 9-1-1's review involved certain assumptions and caveats that must be initially noted and considered. First, the comparison excluded all wireless 9-1-1 calls that did not have wireless Phase II location information for whatever reason (e.g., the wireless 9-1-1 call did not last long enough for a rebid or auto-rebid). For example, during 2017, the number of wireless 9-1-1 calls with wireless Phase I information was 1,649,473, and the number with wireless Phase II information was 1,747,449. Second, certain data required some reasonable extrapolations. For example, the 1,747,449 total number of wireless 9-1-1 calls with wireless Phase II information received by those PSAPs included transferred wireless 9-1-1 calls. However, by definition a transferred wireless 9-1-1 call was only routed by the 9-1-1 selective router once, and hence there could not be a misroute for a transferred call that was not being routed, which reduced the total number of calls with wireless Phase II information from 1,747,449 to 1,514,339. Third and finally, this comparison assumed that the wireless Phase II location information was accurate.

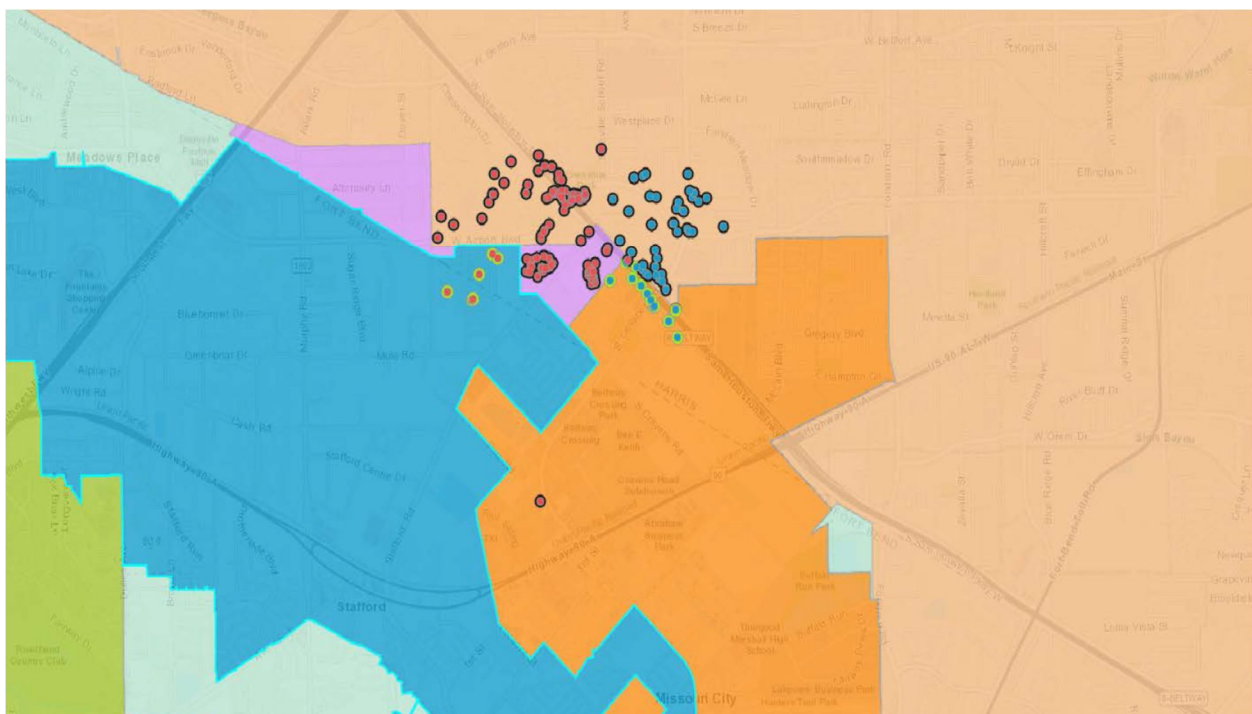
With those assumptions and caveats, the comparison showed a general aggregate average of misroutes of 9.60%, based on 1,514,339 wireless 9-1-1 calls with wireless Phase II information, 225,316 total transfers, and 145,307 misroutes. More importantly, the sector-by-sector percentages and numbers varied considerably, with approximately 70% of cell sectors indicating no misroutes and approximately 10% of sectors having greater than 50% misroutes, with certain

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<sup>10</sup> See, [http://www.911.org/Fact\\_Sheet.asp](http://www.911.org/Fact_Sheet.asp).

enclave areas or cities surrounded by another area or city often being materially impacted by misroutes.

A review of a color-coded picture of the actual wireless Phase II location 9-1-1 calls in one area demonstrates the severe challenges associated with trying to use cell sector routing, and how this approach can become even more complicated geometrically due to municipal annexations. In the picture, the colored areas represent different jurisdictional area boundaries, the circles surrounded by black underlays are misroutes, and the circles surrounded by green underlays are properly routed. (Red points are southwest sector and blue points are southeast sector from the same cell tower.)



Based on the Texas data sample as depicted above,<sup>11</sup> there should be little dispute that improperly relying on a general aggregate average can completely obscure considerable misroute issues in individual sectors and obscure the compelling need for improvements in specific sectors.

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<sup>11</sup> The picture represents the data for the first quarter of calendar year 2018 in the area shown.



**B. Data on Average Time Period Between First PSAP and Second PSAP 9-1-1 Trunk Engagement for Transferred Misroutes**

Based on a study in Snohomish County, Washington, the NOI references an estimated average time period of 40 seconds “added to the call time” for transferred 9-1-1 calls.<sup>12</sup> The GHC 9-1-1 data sample did not calculate a specifically “added to the call time” for transfers associated with misroutes. Nevertheless, for purposes of seeking to provide relevant data to the Commission, as requested in the NOI, a separate review of the data did appear to provide a calculation for the average time period between when the 9-1-1 trunks were engaged at the first PSAP and when the 9-1-1 trunks were engaged at the second PSAP. That average time period appears to have been approximately 79 seconds. However, some of that 79-second time period would have likely included the telecommunicator communicating with the caller and the telecommunicator potentially waiting to determine the location of the caller, both of which could have potentially shortened the call duration at the second PSAP. Therefore, categorizing the entire 79-second time period as being “added to the call time” would not appear to be a fully accurate representation of that data. But the 79-second average 9-1-1 trunk engagement period between the two PSAPs still is helpful data to the Commission’s effort to gather potentially relevant information, especially if later combined with, and considered in the context of, other data the Commission might gather from 9-1-1 stakeholders as a result of this proceeding.

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<sup>12</sup> NOI at ¶ 2 (footnote 2).

**III. The manner in which device-based handset initiated location technology solutions and NG9-1-1 transition may sync up together (including interoperability and timing considerations), and how much cost responsibility is placed on wireless service providers as compared to the NG9-1-1 systems, are appropriate issues to document publicly and clarify in this proceeding.**

The Commission notes in the NOI that the CSRIC V LBR Report finds technical promise in solutions that use device-based handset initiated hybrid location. The Commission points out that this method provides latency of approximately five seconds, has high location accuracy in many environments (including indoors), and is available from a wide variety of location providers. As such, the Commission seeks comment on the CSRIC V LBR Report findings associated with device-based handset initiated hybrid location.<sup>13</sup> The Commission also seeks comment on these solutions in the context of the transition to NG9-1-1 (including whether such is dependent on IP-to-IP interconnection to NG9-1-1 ingress components, and whether it is reasonable to expect that NG9-1-1 would reduce or eliminate the problem of misroutes in the reasonably near future).<sup>14</sup> In the context of this proceeding, the Commission notes that no matter how effective, any solution to the problem of misroutes must withstand “the test of feasibility and functionality relative to costs.”<sup>15</sup> The Commission asks for specific information on costs, including who is bearing the operational costs under the current practice in which a wireless 9-1-1 call is routed to a PSAP based on cell sector. The Commission also asks how the costs differ between legacy systems and

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<sup>13</sup> NOI at ¶ 24. In the context of device-based handset initiated hybrid location technology solutions, it should be noted, if those solutions would only provide LBR improvements for smartphones, that not all wireless subscribers may have smartphones and the percentage of wireless subscribers without smartphones could be noticeably different between rural areas (65%) and urban areas (83%) and noticeably less for those over age 65 (46%). See, *Mobile Fact Sheet*, Pew Research Center, Internet & Technology, % of U.S. adults who own the following devices (available at <http://www.pewinternet.org/fact-sheet/mobile/>).

<sup>14</sup> NOI at ¶¶ 33 and 40.

<sup>15</sup> NOI at ¶ 38.

IP-based systems, and whether the transition to NG9-1-1 will affect the costs of implementing LBR methods discussed in the NOI.<sup>16</sup>

In the last few years, the public, 9-1-1 authorities, PSAPs, telecommunicators, dispatchers, and the Commission have seen numerous news stories, media releases, or presentations regarding the potential uses of device-based handset initiated location technology solutions and other emerging technologies as a supplement to traditional wireless 9-1-1 location information.<sup>17</sup> Sometimes these indicate that device-based handset initiated location technology solutions are currently available as a LBR alternative to misroutes based on cell sector routing.<sup>18</sup> It should also

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<sup>16</sup> NOI at ¶ 39-40.

<sup>17</sup> See, *Google Tests 911 Cellphone Service to Pinpoint Caller Location* (Mar. 8, 2018) (“Google recently concluded a pilot study of its Android ELS, a supplemental service that sends location directly from Android handsets to emergency services when a person calls 911”) (available at <http://www.govtech.com/public-safety/Google-Tests-911-Cellphone-Service-to-Pinpoint-Caller-Location.html>). See also, *Apple Adds 911 Location Feature in Latest iPhone Update, Technology sends precise smartphone location data directly to emergency-call takers* (Jan. 28, 2018) (“It will soon be easier for emergency responders in some countries to locate people who call for help using an iPhone”) (available at <https://www.wsj.com/articles/apple-adds-911-location-feature-in-latest-iphone-update-1516830520>).

<sup>18</sup> See, *Q&A: The Revolution of Wireless 911 Location Technologies*, by John Snapp, Vice President of Technology:

...

*Q: Do we, as a carrier, have to do anything to get these location improvements from Google ELS, LaaSera, AML, etc.? Is there some sort of network-level implementation that needs to be done on our end?*

A: These locations can be provided through the GMLC or MPC within your existing network. You will only need to work with West.

...

*Q: If PSAPs or states have an ESInet provider other than West, will this have an adverse impact? Or is it ESInet provider-agnostic?*

A: WDLS is primarily dependent on the carrier—it will not matter who provides the ESInet. ESInets and CPE/CADs may or may not implement all of the i3 specification, so functions like location push on updates may vary.

(available at [https://www.west.com/blog/safety-services/wireless/qa\\_wireless\\_911\\_location/](https://www.west.com/blog/safety-services/wireless/qa_wireless_911_location/)). See also, Ex Parte Presentation by LaaSera Critical Communications (“Laasera”) in PS Docket 18-64 (Apr. 23, 2018) (“I provided additional details about emerging technologies, such as our own, that demonstrate that device-based location can be used to improve emergency call routing right now.”) (available at <https://ecfsapi.fcc.gov/file/10425208513961/LaaSera-Routing-Location-Ex-Parte.pdf>.) The news stories, media releases, or presentations may sometimes reference NG9-1-1. See, *NG911 Clearinghouse meets Android ELS, Lessons from a pilot project to find 911 callers faster using NG911* (Feb. 2018) (available at <http://www.ng911institute.org/wp-content/uploads/2018/03/2018-NG911-Technology-Showcase-RapidSOS.pdf>).

be noted that during the last few years some geographic areas have moved to Internet Protocol Selective Routers (IPSRs) as an initial transition step towards defined end state NENA NG9-1-1. That move is sometimes followed by an intermediate transition step of adding geospatial routing, while other times the initial IPSR step and intermediate geospatial routing step are combined simultaneously “to help eliminate misrouted calls by using location-based call routing, where real-time caller location data is provided with the call.”<sup>19</sup>

As far as the potential additional material costs, if any, to wireless service providers to implement LBR either immediately or in the near future, the Texas 9-1-1 Entities defer in the first instance to those wireless service providers or their potential third-party vendors to submit such cost data publicly into the record in this proceeding. From the Commission’s perspective based on the E9-1-1 *King County* ruling, the cost demarcations for E9-1-1 between wireless service providers, 9-1-1 system service providers, and 9-1-1 authorities/PSAPs are well settled.<sup>20</sup> Given the current frequency of misroutes (*see* Section II, *above*), absent documentation of material costs to wireless service providers being provided into the record in this proceeding, at the present time it appears that Commission action would withstand the test of feasibility and functionality relative to costs.

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<sup>19</sup> See, *NG9-1-1 Changes Everything: Will You Lead, Follow or be Left Behind?*, White Paper at p. 3 (available at [https://www.motorolasolutions.com/content/dam/msi/docs/business/solutions/business\\_solutions/command\\_and\\_control/documents/ng9-1-1\\_changes\\_everything\\_white\\_paper.pdf](https://www.motorolasolutions.com/content/dam/msi/docs/business/solutions/business_solutions/command_and_control/documents/ng9-1-1_changes_everything_white_paper.pdf)).

<sup>20</sup> See, Revision of the Commission’s Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Request of King County, Washington, CC Docket No. 94-102, Order on Reconsideration, 17 FCC Rcd 14789, ¶ 1 (2002) (“King County Decision”) (available at <https://transition.fcc.gov/Bureaus/Wireless/Orders/2001/kingco.pdf>) (“The decision we reach here addresses the issue of where the responsibilities lie between the wireless carrier and the PSAP in terms of the costs of implementing E911 Phase I service, under the facts and circumstances of this case and the record before us. We do not address the issue of which party – PSAP or carrier – may choose the transmission method and technology to be used to provide Phase I. ... We expect carriers to negotiate in good faith with the PSAPs concerning the appropriate Phase I technology, based on the totality of the circumstances before them, including what best serves the PSAP and their own subscribers’ interest in having timely access to E911 services.”). (How the Commission’s “King County” ruling may change or translate to the context of NG9-1-1, if at all, is an issue that the Commission has not specifically yet addressed.)

In order for the Commission and 9-1-1 stakeholders to be able to make informed decisions and do reasonable strategic planning, the timing and mechanisms for implementing device-based handset initiated hybrid location technology solutions and other emerging technologies to improve (1) call routing, (2) caller location information, and (3) NG9-1-1 must be publicly documented in the record in this proceeding. Issues for the Commission to carefully consider in its review, once more public information is provided, include the following: First, because of the frequency of misroutes, a reasonable path towards further improvements on this issue should be an outcome of this proceeding. Second, 9-1-1 authorities and PSAPs cannot reasonably be expected to simultaneously deploy multiple solutions from different vendors of supplemental device-based handset initiated location technology solutions and emerging technologies. Third, if 9-1-1 authorities are going to transition towards NG9-1-1 solutions, there must be some reasonable expectation regarding when at least a majority of cell sectors will be able to transition to those solutions consistent with standards to enable the full benefits of NG9-1-1, and greater certainty regarding that likely time period. Finally (and somewhat conversely of the third point above), if the four major nationwide wireless carriers are going to transition towards NG9-1-1 solutions, there should be some reasonable expectation of when at least a majority of 9-1-1 authority areas will be able to transition to those solutions consistent with standards to enable the full benefits of NG9-1-1, and greater certainty regarding that likely time period.<sup>21</sup>

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<sup>21</sup> If within five years from now a majority of 9-1-1 authority service areas are going to have NG9-1-1 deployed with geospatial routing and if within the same five years a majority of wireless carrier cell sectors will be connected IP-to-IP to NG9-1-1 ingress points and will be able to deliver consistent with standards PIDF-LO with caller location information (including from device-based handset initiated location technology solutions and emerging technologies), then informed decisions and reasonable strategic transition planning with regard to cell sector misroutes might arguably favor certain voluntary best practices, implementation of incentive-based mechanisms, and/or regulatory action. On the other hand, if instead of five years from now for those same things to occur it would be 20 years, then informed decisions and reasonable strategic transition planning might arguably favor other voluntary best practices, implementation of incentive-based mechanisms, and/or regulatory action. However, there may be some aspects that might be the same regardless of whether that period is five years from now or is 20 years from now; for example, because of technology, cost, or operational considerations, some older legacy tier III wireless carrier system might

In the absence of sufficient public disclosure of information and subsequent informed discussions between the various 9-1-1 stakeholders (e.g., wireless service providers, handset manufacturers, third-party vendors, 9-1-1 authorities, etc.), the nature of the competitive market and the sheer number of stakeholders can present significant challenges to making informed decisions and strategic transition planning regarding device-based handset initiated location technology solutions. The manner in which device-based handset initiated location technology solutions and NG9-1-1 transition may sync up together, including interoperability and timing considerations, and how much cost responsibility is placed on wireless service providers' as compared to the NG9-1-1 systems, are appropriate issues to clarify through this proceeding.

**IV. Any material delay of the delivery of 9-1-1 calls beyond 6 seconds to achieve LBR should generally be viewed with strong skepticism.**

The Commission asks if the proper way to implement LBR should be by holding a wireless 9-1-1 call until Phase II location is available. This approach is fraught with difficulties, the least of which is the inclination for callers with emergencies to get frustrated and hang up. The Commission also indicates that it is inclined to agree with the CSRIC V LBR Report's recommendation that holding the call not be pursued as a LBR solution.<sup>22</sup> The Texas 9-1-1 Entities concur with the Commission and the CSRIC V Report on this matter. If callers with emergencies get frustrated and hang up, it could result in more callbacks needing to be done by the PSAPs unnecessarily and more checks on the welfare of the caller potentially being done unnecessarily. Delaying the delivery of 9-1-1 calls more than fractionally beyond 6 seconds in order to achieve

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need to stay a certain way until the system is taken out of service. (Other closely related matters, such as IP-to-IP Interconnection to NG9-1-1 ingress components and delivery of Real-Time Text ("RTT") via Session Initiation Protocol instead of via TTY conversion are also appropriate issues for the Commission to facilitate additional public disclosure of information and discussion between 9-1-1 stakeholders.)

<sup>22</sup> NOI at ¶ 19.

LBR should generally be viewed with appropriately strong skepticism, especially where other alternatives appear to be available to achieve improvements towards LBR.<sup>23</sup>

**V. Regarding mobile VoIP and using only a registered and provisioned civic address from a smartphone or tablet, the Texas 9-1-1 Entities urge the Commission, at a minimum, to consider the issue of a location sanity check when a customer changes locations and has not re-registered a caller civic location.**

The Commission seeks comment on how their 9-1-1 rules for interconnected VoIP service can be modernized to better address the availability of mobile VoIP services and permit the application of location technologies that can update or verify a 911 caller's registered location. The Texas 9-1-1 Entities raised the issue of concerns with continuing to use only registered and provisioned civic address solutions from a smartphone or tablet for Wi-Fi Calling 9-1-1 calls in the context of RTT in 2016.<sup>24</sup> As was the case at that time, Wi-Fi Calling 9-1-1 calls from a smartphone from at least the four major wireless service providers still appear to first try to reach a Commercial Mobile Radio Service ("CMRS") network before sending 9-1-1 calls via Wi-Fi Calling.<sup>25</sup> As was the case at that time as well, it still appears that there have been very few, if any, 9-1-1 calls using Wi-Fi Calling 9-1-1 with actual emergencies (other than perhaps from

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<sup>23</sup> As noted earlier, in the NOI the Commission notes that CSRIC V LBR Report finds that use device-based handset initiated hybrid location provides latency of approximately five seconds. NOI at ¶ 24.

<sup>24</sup> Texas 9-1-1 Entities Initial Comments in CG Docket No. 16-145 and GN Docket 15-178 (July 11, 2016) at p. 6:

There is great ambiguity and differing views regarding what Commission 9-1-1 requirements, if any, apply to Wi-Fi 9-1-1 calling from a mobile handset, and whether or when Wi-Fi 9-1-1 calling from a mobile handset might fall under the Commission's Commercial Mobile Radio Service ("CMRS") Rule 20.18, the Commission's Interconnected VoIP Rule 9.5, or neither. This lack of clarity potentially impacts not only the location information associated with RTT via Wi-Fi 9-1-1 calling, but also the proper routing of RTT via Wi-Fi calling. (Available at <https://www.fcc.gov/ecfs/filing/107110122630587>.)

<sup>25</sup> Sprint ... Does 9-1-1 work with Wi-Fi Calling? Yes. A 9-1-1 call may first attempt to route over a wireless carrier network. If a 9-1-1 call doesn't route over a wireless carrier network within approximately 20 seconds, a 9-1-1 call may then attempt to route over Wi-Fi Calling. Always be prepared to provide your precise location information to emergency service personnel and to contact emergency services by alternate means. ...Other Non-Cellular Devices: Sprint's Wi-Fi Calling service can also be used with certain other non-cellular or Companion devices. Not all devices connect to a cellular network and therefore cannot attempt a 9-1-1 call over a cellular network. On such devices, a 9-1-1 call may attempt to route over Wi-Fi Calling. See, <https://www.sprint.com/en/support/solutions/services/faqs-about-wi-fi-calling.html>

AT&T Wi-Fi Calling or via RTT App from AT&T and its reseller wireless carriers). It is also recognized that at the present time, beta projects such as Google Wi-Fi Calling may not be being set up initially to make 9-1-1 calls.<sup>26</sup> Nonetheless, continuing to provide only a registered and provisioned civic address from a smartphone or tablet for Wi-Fi Calling still remains inherently concerning (especially given the potential for using device-based handset initiated location technology solutions and emerging technologies for 9-1-1); accordingly, the Texas 9-1-1 Entities urge the Commission, as recommended in the NENA Non-Mobile Technical Information Document, to consider the issue of a location sanity check when a customer with mobile VoIP changes locations and has not re-registered a caller civic location.<sup>27</sup>

## **VI. Conclusion**

The Texas 9-1-1 Entities appreciate the opportunity to provide the foregoing initial comments on these matters, and respectfully request that the Commission take action in this proceeding a manner consistent with these initial comments.

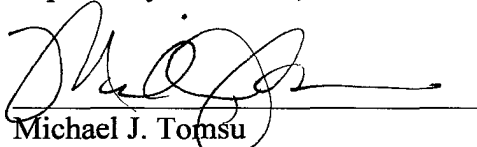
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<sup>26</sup> *Google Begins Testing Wi-Fi Calls for Google Voice* (Apr. 5, 2018) (“Google also notes that 911 calls won't work with Voice's data calls right now. You'll have to use your regular phone dialer for that.”) (Available at <https://www.extremetech.com/mobile/267052-google-begins-testing-wi-fi-calls-for-google-voice>.)

<sup>27</sup> NENA Non-Mobile Wireless Service Interaction Information Document, NENA-INF-018.1-2017, February 16, 2017, at p. 20 (“When a Wi-Fi calling mobile handset enables the customer or the wireless carrier to register the caller civic location, the issue of whether to have a location sanity check that switches to mobile WPH1 and WPH2 mode if the customer moves the Wi-Fi calling and has not re-registered a caller civic location should be considered.”) (Available at [http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/NENA-INF-018\\_Non-Mobile\\_Wire.pdf](http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/standards/NENA-INF-018_Non-Mobile_Wire.pdf).)

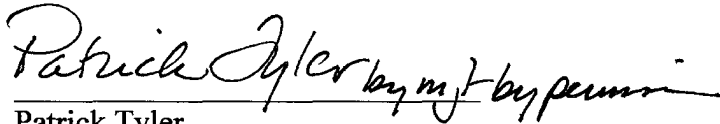


Respectfully submitted,




Michael J. Tomsu  
Vinson & Elkins L.L.P.  
2801 Via Fortuna, Suite 100  
Austin, Texas 78746  
512-542-8527  
512-236-3211 (fax)  
[mtomsu@velaw.com](mailto:mtomsu@velaw.com)

On behalf of the Texas 9-1-1 Alliance



Patrick Tyler  
General Counsel  
333 Guadalupe Street, Suite 2-212  
Austin, Texas 78701-3942  
512-305-6915  
512-305-6937 (fax)  
[Patrick.tyler@csec.texas.gov](mailto:Patrick.tyler@csec.texas.gov)

On behalf of the Texas Commission on State Emergency Communications



Elizabeth Cole  
President

On behalf of the Municipal Emergency Communication Districts Association

On the comments:

Richard A. Muscat  
Bexar Metro 9-1-1 Network

May 7, 2018